REMARKS

Applicant respectfully requests that the application be reconsidered in view of the above amendments and the following remarks. In the Office Action, dated October 5, 2004, the Examiner rejected claims 1-11, 13 and 19-31 under 35 U.S.C. §102(e) as allegedly being anticipated by U. S. Patent No. 6,694,149 (hereinafter "ADY"). Applicants note with appreciation the Examiner's indication of allowable subject matter in claim 12, and the allowance of claims 14-18 and 32-34.

By way of this amendment, Applicants have amended claims 1, 6 and 7 to incorporate the subject matter of claim 5 and to improve form. Claim 13 has been amended to incorporate the subject matter of claim 12, which the Examiner has indicated as containing allowable subject matter. Claims 25, 26 and 28-31 have been amended to improve form. Claims 4, 5 and 27 have been canceled without prejudice or disclaimer. New claim 35 has been added. No new matter has been added by way of the present amendment. Reconsideration of the outstanding rejection of pending claims 1-3, 6-11, 13, 19-26 and 28-31 is respectfully requested in view of the amendments above and the following remarks.

In paragraph 4, the Office Action rejects pending claims 1-11, 13 and 19-31 under 35 U.S.C. §102(e) as allegedly being anticipated by ADY. Applicants respectfully traverse.

Amended independent claim 1, for example, recites a "method of conserving energy in a node in a wireless network" that includes "receiving, at the node, a first powering-on schedule from another node in the network," "selectively powering-on at least one of a transmitter and receiver based on the received first schedule," "producing a second powering-on schedule based on the first powering-on schedule," and "transmitting the second powering-on schedule from the node to other nodes in the network when the transmitter is in a powered-on state."

A proper rejection under 35 U.S.C. §102(e) requires that a reference teach every aspect of the claimed invention. See M.P.E.P. 2131. Applicants submit that ADY does not disclose or suggest the combination of features recited in Applicants' amended claim 1.

For example, ADY does not suggest or disclose "receiving, at the node, a first powering-on schedule from another node in the network," "producing a second powering-on

schedule based on the first powering-on schedule," and "transmitting the second powering-on schedule from the node to other nodes in the network when the transmitter is in a powered-on state." On page 3, with respect to claims 4 and 5 (which have been incorporated into amended claim 1), the Office Action relies on column 2, lines 24-36; column 3, lines 16-23; and column 5, lines 19-43 as allegedly disclosing the above-recited combination of features. Applicants respectfully submit that these sections of ADY do not disclose or suggest the features noted above.

At column 2, lines 24-36, ADY discloses:

> A method and apparatus for reducing power consumption in a network device is provided. A network device is placed in a quiescent mode and scheduled to switch to an active mode at a scheduled time. At the scheduled time, the network device is activated. A control message is received by the network device. The control message includes an indication as to whether or not the network device should remain in the active mode in preparation of receiving a data message. The scheduled time is set sufficiently in advance of the control message to allow adequate time for activation of the network device prior to communication of the control message.

This section of ADY discloses that a network device may first be placed in a quiescent mode, and then switched to an active mode at a pre-scheduled time. After switching to the active mode, the network device may receive a control message that instructs the network device to remain in the active mode to receive a data message. This section of ADY, thus, does not disclose, or even suggest, "receiving, at the node, a first powering-on schedule from another node in the network," "producing a second powering-on schedule based on the first powering-on schedule," and "transmitting the second powering-on schedule from the node to other nodes in the network when the transmitter is in a powered-on state," as recited in amended claim 1.

At column 3, lines 16-23, ADY discloses:

> The invention may be applied to a network system. For example, the invention may be applied to a cable modem or to a cable modem termination system, such as one located at a headend subsystem 102 and used to communicate with cable modems located as indicated by network devices 104, 105, 106, and 107. The invention may be applied to the cable system as a whole, including a cable modem and a cable modem termination system.

The section of ADY merely discloses application of the energy conservation technique of ADY to a cable network that includes cable modems and a cable modem termination system. This section of ADY does not disclose or suggest "receiving, at the node, a first powering-on schedule from another node in the network," "producing a second powering-on schedule based on the first powering-on schedule," and "transmitting the second powering-on schedule from the node to other nodes in the network when the transmitter is in a powered-on state," as recited in amended claim 1.

At column 5, lines 19-43, ADY discloses:

> FIG. 4 is a diagram illustrating control messages for several groups being communicated according to an embodiment of the invention. A control message is transmitted for each group, staggered in time from the other groups. A time slot is defined for each control message to include the time the control message is transmitted and the following time until another control message is transmitted. For example, a time slot 406 is defined for group A to include the time during which the control message 402 for group A is transmitted and the following time until the control message 403 for group B is transmitted. Time slot 406 has a duration T1. Likewise, a time slot 407 is defined for group B including control message 403 and having a duration T2. A time slot 408 is defined for group C including control message 404 and having a duration T3. A second occurrence of a time slot for group A is defined as time slot 409, which includes control message 405 and has a duration T4. The duration T4 may be identical to or different from the duration T1. Likewise, the durations T2 and T3 may be identical to or different from the duration T1. Taken together, these control messages and their corresponding time slots form a control stream 401. Control message 402 includes indication 410, control message 403 includes indication 411, control message 404 includes indication 412, and control message 405 includes indication 413.

This section of ADY merely discloses the transmission, from headend subsystem 102, of control messages to different groups of network devices over different, specific time slots. This section does not disclose, or in any way suggest, the receipt of a first powering-on schedule at a node from another node in a network, the production of a second powering-on schedule based on the first powering-on schedule, and transmission of the second powering-on schedule from the node to other nodes in the network, as recited in amended claim 1.

For at least the foregoing reasons, Applicants submit that amended claim 1 is not anticipated by ADY.

Claims 2 and 3 depend from claim 1 and, therefore, patentably distinguish over ADY for at least the reasons set forth with respect to claim 1 above.

Independent claims 6 and 7, as amended, recite similar features to those discussed above with respect to claim 1. These claims, therefore, patentably distinguish over ADY for similar reasons to those set forth above with respect to claim 1.

Independent claim 8 recites a "method of conveying messages in a sensor network" that includes "organizing a sensor network into a hierarchy of tiers," "transmitting one or more transmit/receive scheduling messages throughout the network," and "transmitting and receiving data messages between nodes in adjacent tiers based on the one or more transmit/receive messages." ADY does not disclose or suggest this combination of features.

For example, ADY does not disclose or suggest "organizing a sensor network into a hierarchy of tiers," as recited in claim 8. The Office Action relies on column 3, lines 53-67 of ADY for allegedly disclosing this feature (Office Action, pg. 4). Applicants disagree.

At column 3, lines 53-67, ADY discloses:

> For example, a first geographic region 112 may be defined to include network device 104 and network device 105, and a second geographic region 113 may be defined to include network device 106 and network device 107. Since network device 104 of the first geographic region 112 is assigned to the first group 108, and network device 105 of the first geographic region 112 is assigned to the second group 110, the network devices of the first geographic region 112 are spread evenly among the first group 108 and the second group 110. Likewise, since network device 106 of the second geographic region 113 is assigned to first group 108 and network device 107 of the second geographic region 113 is assigned to second group 110, the network devices of the second geographic region 113 are spread evenly among the first group 108 and the second group 110.

This section of ADY, thus, discloses the assignment of different network devices 104, 105, 106 and 107 to different groups 108 and 110 based on a geographic region associated with each network device. ADY does not disclose, or even suggest, that the groups 108 and 110

are in any way organized into a hierarchy. ADY merely discloses the division of a set of network devices into multiple groups, but does not disclose or suggest any type of hierarchical arrangement between those groups. ADY, therefore, does not disclose or suggest "organizing a sensor network into a hierarchy of tiers," as recited in claim 8.

Claims 9-11 depend from claim 8 and, therefore, patentably distinguish over ADY for at least the reasons set forth above with respect to claim 8.

Independent claim 13 has been amended to incorporate the subject matter of claim 12, which the Examiner has indicated as being allowable. Since claim 13 recites features similar to features recited in claim 8, from which claim 12 depends, claim 13, therefore, should now be in condition for allowance.

Independent claim 19 recites a "method of forwarding messages at a first node in a network" that includes "receiving scheduling messages from a plurality of nodes in the network," "selecting one of the plurality of nodes as a parent node" and "selectively forwarding data messages to the parent node based on the received scheduling message associated with the selected one of the plurality of nodes." ADY does not disclose of suggest this combination of features.

For example, ADY does not disclose or suggest "receiving scheduling messages from a plurality of nodes in the network," as recited in claim 19. The Office Action relies on column 2, lines 24-36; column 3, lines 16-23 and column 5, lines 19-43 as allegedly disclosing this feature (Office Action, pg. 5). These sections of ADY, as noted above with respect to claim 1, merely disclose the transmission, from headend subsystem 102, of control messages to different groups of network devices over different, specific time slots. ADY, thus, discloses the receipt of control messages, at each of multiple network devices, from a single node (i.e., from headend subsystem 102). ADY, however, does not disclose, or even suggest, the receipt of scheduling messages from a plurality of nodes in the network, as

recited in claim 19. Claim 19, therefore, is not anticipated by ADY, and withdrawal of the rejection of this claim is respectfully requested.

Claims 20-22 depend from claim 19 and, therefore, patentably distinguish over ADY for at least the reasons set forth above with respect to claim 19. Moreover, these claims include other features not disclosed or suggested by ADY.

For example, claim 20 recites "organizing nodes in the network into a hierarchy of tiers." This feature is similar to the feature discussed above with respect to claim 8. Claim 20, therefore, patentably distinguishes over ADY for similar reasons to those set forth above with respect to claim 8.

Independent claims 23 and 24 recite similar features to features recited in claim 19. Claims 23 and 24, therefore, patentably distinguish over ADY for similar reasons to those set forth above with respect to claim 19.

Amended independent claim 25 recites a "method of conserving power at a first node in a network, wherein the first node is an intermediate node on a path between one or more other nodes and a second node" that includes "powering-on, at the first node, a receiver to listen for a scheduling message," "receiving the scheduling message from the second node in the network, wherein the scheduling message specifies a first communication schedule that indicates times at which the first and second nodes may communicate with one another and a second communication schedule that indicates times at which the first node may communicate with each of the one or more other nodes" and "selectively powering-on and powering-off the receiver and a transmitter based on the first and second communication schedules." ADY does not disclose or suggest this combination of features.

For example, ADY does not disclose or suggest "wherein the first node is an intermediate node on a path between one or more other nodes and a second node" and "wherein the scheduling message specifies a first communication schedule that indicates

times at which the first and second nodes may communicate with one another and a second communication schedule that indicates times at which the first node may communicate with each of the one or more other nodes." The Office Action cites column 2, lines 24-36; column 3, lines 16-23 and column 5, lines 19-43 as allegedly disclosing the features of claim 25 (Office Action, pg. 6). However, as discussed above with respect to claim 1, these sections of ADY merely disclose the transmission, from headend subsystem 102, of control messages to different groups of network devices over different, specific time slots and use of those control messages for instructing the network devices, that have transitioned from an energy saving quiescent mode, to an active mode, to remain in the active mode to receive a data message. ADY does not disclose, or even suggest, a first node that is an intermediate node on a path between one or more other nodes and a second node, and receiving a scheduling message that specifies a first communication schedule that indicates times at which the first and second nodes may communicate with one another and a second communication schedule that indicates times at which the first node may communicate with each of the one or more other nodes, as recited in amended claim 25.

Claims 26, 28 and 29 depend from claim 25 and, therefore, patentably distinguish over ADY for at least the reasons set forth above with respect to claim 25. Moreover, these claims include additional features not disclosed or suggested by ADY.

For example, claim 26 recites "organizing the first node, second node, and one or more other nodes in the network into a hierarchy of tiers." This feature is similar to the feature discussed above with respect to claim 8. Claim 26, therefore, patentably distinguishes over ADY for similar reasons to those set forth above with respect to claim 8.

Independent claims 30 and 31 recite similar features to those discussed above with respect to claim 25. Claims 30 and 31, therefore, patentably distinguish over ADY for similar reasons to those set forth with respect to claim 25 above.

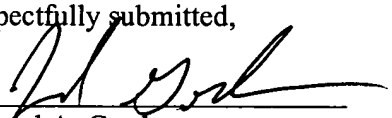
New claim 35 recites "receiving messages, at a first node, from neighboring nodes in a network notifying the first node of the neighboring nodes' presence in the network," "determining a first communication schedule that indicates times for communicating with each of the neighboring nodes," determining a second communication schedule that indicates times for each of the neighboring nodes to communicate with other nodes in the network" and "transmitting a message to each of the neighboring nodes, wherein the message includes the first communication schedule and the second communication schedule." ADY does not disclose or suggest this combination of features.

In view of the foregoing amendment and remarks, Applicants respectfully request the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

Applicant believes no fee is due with this response other than as reflected on the enclosed Amendment Transmittal. However, if a fee is due, please charge our Deposit Account No. 18-1945, under Order No. BBNT-P01-151 from which the undersigned is authorized to draw.

Dated: January 6, 2005

Respectfully submitted,

By 

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